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AMERICAN SPIDERS OF THE GENUS *EPISINUS*  
(ARANEAE: THERIDIIDAE)

By HERBERT W. LEVI

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No. 1 — *American Spiders of the Genus Episinus (Araneae: Theridiidae)*

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Many species of *Episinus* are known from only a single specimen; most species are rare. Many species are small and similar, and the degree of sclerotization of the transparent epigyna is highly variable, making their study difficult. The smaller species described here were examined twice, once in 1960 and again with better optical equipment in 1962. Most types of Simon were examined in 1958 and again in 1962. In addition to the many similar, minute species, there are a number of larger ones, most quite distinct in structure and also of rare occurrence. The generic placement of these larger species is often uncertain because of their greater diversity in appearance.

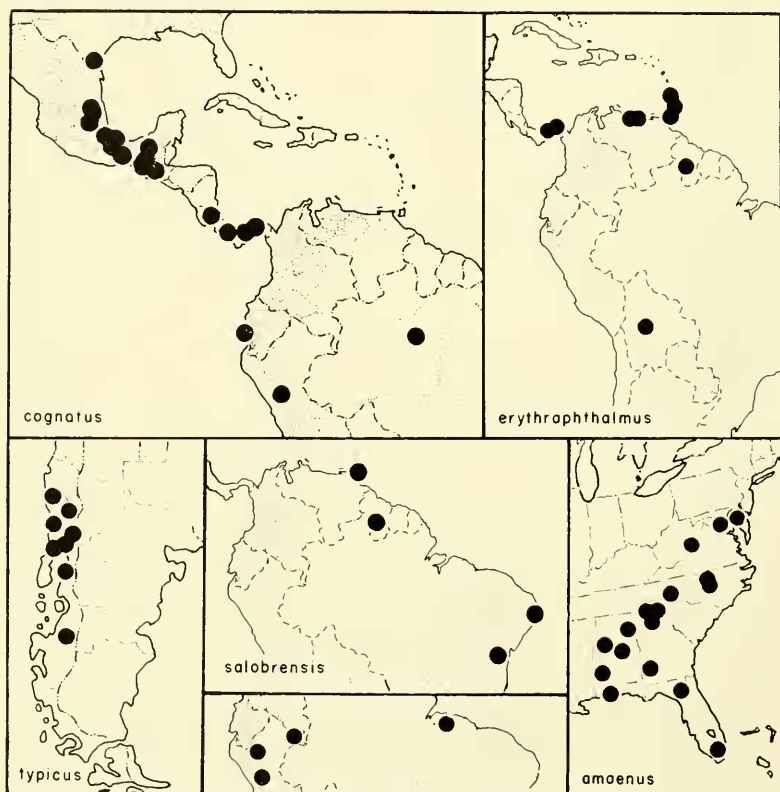
The study of American *Episinus* was made possible through the help of numerous colleagues who loaned collections and permitted me to examine types. I would like to acknowledge with thanks the loan of specimens from the following collections: Muséum National d'Histoire Naturelle, Paris (MNHN), by Prof. M. Vaehon and J. F. Jézéquel; the American Museum of Natural History (AMNH) by Dr. W. J. Gertsch; the British Museum (Natural History) (BMNH) by Mr. D. J. Clark, Mr. K. H. Hyatt, Mr. E. Browning and Dr. G. Owen Evans; the personal collection of Prof. A. M. Chickering now housed in the Museum of Comparative Zoology; and personal collection of Mrs. D. Frizzell (Dr. H. Exline); the California Academy of Sciences (CAS) by Mrs. Frizzell and Dr. E. S. Ross; the Institut Royal des Sciences Naturelles de Belgique (ISNB) by Dr. A. Collart and Mr. J. Kekenbosch; the Senckenberg Museum (SMF) by Dr. O. Kraus; the Natural History Museum, Stockholm, by Dr. L. Brundin; the Naturhistorisches Museum, Vienna, by Dr. M. Beier, and specimens from Miss H. Zapfe (Mrs. G. Mann). I am grateful to Fr. Chrysanthus for checking the latinization of specific names. The examination of types in European museums was made possible by a National Science Foundation Grant (G-4317), the completion of the revision by a grant from the National Institutes of Health (AI-01944).

EPISINUS Latreille

*Episinus* Latreille, 1809, *Genera Crustaceorum et Insectorum*, 4: 371. Type species by monotypy *E. truncatus* Latreille, 1809, of Europe.

Carapace often with a pair of horns between anterior and posterior median eyes. Lenses of lateral and posterior median eyes often on tubercles, with silvery and sometimes reddish pigment. Chelicerae small with a tooth or teeth on anterior margin, sometimes without teeth. First legs longest. Abdomen usually modified with humps, tubercles, and sometimes with small nipples, often light-colored with gray marks, streaks and sometimes white pigment. The smaller species have less pigment than larger ones. Colulus replaced by two setae.

Palpus extremely complex, all structures proliferated, large, connected by large haematodocha.



Distribution of *Episinus cognatus*, *erythrophthalmus*, *typicus*, *salobrensis*, *immundus*, *amoenus*.

Species of *Episinus* are found in all parts of the world, although most occur in warmer regions. The distribution of the commonest American species is illustrated by the map.

*Episinus* has many species in tropical America. Most species are small with little pigment, the abdomen is subtriangular, and there is a pair of horns between the eyes. However, several species are larger, pigmented, and have the abdomen longer than wide. *Episinus cognatus*, the largest, has indications of horns between the eyes; *E. recifensis*, known only from the male and also large, has horns. The genitalia of males of the large species are similar to those of the smaller ones.

*Episinus americanus* Nicolet, 1849, in Gay, *Historia de Chile*, Zool., 10: 543 is probably an argiopid related to *Micrathena*.

*Episinus brasilianus* Keyserling, 1884, *Die Spinnen Amerikas*, Theridiidae, 2(1): 206, pl. 10, fig. 124, ♀. Female holotype from Brazil in the Naturhistorisches Museum, Vienna, examined, is a female *E. truncatus* Latreille, a European species. Most likely the locality is in error.

In the keys, "Fig." capitalized refers to this paper, "fig." in lower case, to the previous paper (Levi, 1955, *Jour. New York Ent. Soc.*, 62: 65-90).

#### Key to male *Episinus*

- |     |  |                      |
|-----|--|----------------------|
| 1a. | Total length greater than 2.6 mm (carapace more than 1.0 mm wide)  | 2                    |
| 1b. | Total length less than 2.3 mm (carapace less than 0.9 mm wide)   | 5                    |
| 2a. | Length of palpal tibia about equals that of cymbium.   | 3                    |
| 2b. | Length of palpal tibia less than two-thirds that of cymbium  | 4                    |
| 3a. | Conductor (at distal mesal tip) with hook (1955, fig. 8); Texas to Peru  | <i>cognatus</i>      |
| 3b. | Conductor without such hook (Fig. 8); eastern Brazil   | <i>recifensis</i>    |
| 4a. | Embolus base hidden by tegulum (1955, fig. 4); southeastern United States  | <i>amoenus</i>       |
| 4b. | Embolus base visible in ventral view (Fig. 15); Chile  | <i>typicus</i>       |
| 5a. | Total length greater than 1.8 mm; filiform portion of embolus of palpus with two bends, S-shaped (1955, fig. 13; Fig. 4) | 6                    |
| 5b. | Total length less than 1.7 mm; filiform portion of palpus evenly curved  | 7                    |
| 6a. | Diameter of anterior median eyes more than three times that of other eyes; conductor as in Figure 4; Cuba, Hispaniola    | <i>gratiosus</i>     |
| 6b. | Diameter of anterior median eyes less than twice that of other eyes; conductor as in 1955, figure 13; Panama to Guianas  | <i>bruncoviridis</i> |
| 7a. | Conductor tipped with an ectally directed spine (Fig. 78); Trinidad to eastern Brazil                                    | <i>salobrensis</i>   |

7b.	Conductor otherwise	8
8a.	Palpal tibia equal in length or longer than cymbium	9
8b.	Palpal tibia less than two-thirds cymbial length	11
9a.	Embolus filament a relatively thick, short structure (Fig. 57); south-eastern Brazil	<i>bicorniger</i>
9b.	Embolus filament a relatively fine, long structure; Central America	10
10a.	Distal margin of embolus base almost transverse to long axis of cymbium; distal portion of bulb with an ectal projection (Fig. 50); Nicaragua	<i>aspus</i>
10b.	Distal margin of embolus base not transverse, ectal projection lacking (1955, fig. 14); Panama	<i>panamensis</i>
11a.	Length of palpal tibia less than one-third cymbial length; palpal bulb tipped by two transparent projections (1955, fig. 11); Mexico to Panama	<i>colima</i>
11b.	Length of palpal tibia about equal to or more than half length of cymbium; bulb tip otherwise	12
12a.	Bulbal tip with a sclerotized elbowed piece (1955, fig. 12); Bahama Isls., Jamaica	<i>nadleri</i>
12b.	Bulbal tip otherwise	13
13a.	Distal end of palpal bulb with an ectal pointing hook (Fig. 45); Panama	<i>raticus</i>
13b.	Distal end otherwise	14
14a.	Embolus base with a mesally directed lobe above filiform portion (Figs. 90-93); Panama to Bolivia	<i>erythrophthalmus</i>
14b.	Embolus base without a mesally directed lobe above base of filiform portion (1955, figs. 5, 7); Mexico	15
15a.	Ectal sclerotized margin of conductor widest on distal end (1955, fig. 5)	<i>juarezi</i>
15b.	Ectal sclerotized margin of conductor widest on proximal end (1955, fig. 7)	<i>chiapensis</i>

### Key to female *Episinus*

1a.	Abdomen with a large dorsal extension, higher than long or wide (Fig. 24); southeastern Brazil	<i>terecopolis</i>
1b.	Abdomen otherwise with at most a median dorsal tubercle	2
2a.	Abdomen widest anteriorly	3
2b.	Abdomen widest in middle or posteriorly	4
3a.	Abdomen with a median dorsal tubercle (Fig. 23); Venezuela	<i>implexus</i>
3b.	Abdomen without median dorsal tubercle (Fig. 11); Panama	<i>emanus</i>
4a.	Abdomen subspherical with a median dorsal tubercle (Figs. 30, 31); Peru	<i>malachinus</i>
4b.	Abdomen otherwise	5
5a.	Abdomen longer than wide; total length more than 2.4 mm	6
5b.	Abdomen as wide as long or wider than long or if longer than wide, total length less than 2.2 mm	10

- 6a. Abdomen with a dorsal distinct white folium pattern bordered by black (1955, fig. 34); Panama to Guianas *brunneoviridis*
- 6b. Abdomen otherwise . . . . . 7
- 7a. Epigynum with an anterior sclerotized raised knob (Fig. 13); abdomen pointed anteriorly (Fig. 14); Chile *typicus*
- 7b. Epigynum otherwise; abdomen truncate anteriorly . . . . . 8
- 8a. Epigynum with a slight depression bordered anteriorly and around sides (1955, fig. 21); total length more than 4.4 mm; Texas to Central Peru *coqualus*
- 8b. Epigynum depression not bordered anteriorly; total length less than 4.5 mm; eastern U. S. west to Alabama, Cuba, Hispaniola . . . . . 9
- 9a. Epigynum depression anterior to seminal receptacles (Figs. 1, 2); Cuba, Hispaniola *gratiosus*
- 9b. Epigynum depression posterior to seminal receptacles (1955, fig. 17); eastern U. S., Maryland to Alabama *amoenus*
- 10a. Abdomen subspherical, widest in middle (Figs. 18, 20) or diamond shaped (Fig. 7); total length 4.0 mm or more . . . . . 11
- 10b. Abdomen subtriangular, widest near posterior; total length less than 3.0 mm . . . . . 12
- 11a. Abdomen with humps on middle of sides (Fig. 7); epigynum with a scape (Fig. 6); seminal receptacles sausage-shaped; Peru *albostrigatus*
- 11b. Abdomen without humps (Fig. 18) or humps posterior (Fig. 20); epigynum with a depression (Figs. 17, 22) *immundus*
- 12a. Abdomen with a median anterior tubercle (Fig. 54); Venezuela *bimacronatus*
- 12b. Abdomen without anterior tubercle . . . . . 13
- 13a. Abdomen with dorsal tubercles or nipples . . . . . 14
- 13b. Abdomen without dorsal tubercles or nipples . . . . . 19
- 14a. Abdomen with a single median dorsal nipple (Fig. 37) . . . . . 15
- 14b. Abdomen with several dorsal nipples (Figs. 27, 34, 40) . . . . . 16
- 15a. Duct winding twice around seminal receptacles (1955, fig. 31); Mexico *juarezi*
- 15b. Duct winding once around seminal receptacles (Fig. 38); Panama *panamensis*
- 16a. Abdomen wider than long, lateral tubercles crowned by thorns (Fig. 27); epigynum with a small central depression (Fig. 29); Jamaica *unilus*
- 16b. Abdomen longer than wide or length equals width (Fig. 34); epigynum otherwise . . . . . 17
- 17a. Epigynum with a distinct transverse lip (Fig. 36); Panama *pycus*
- 17b. Epigynum otherwise . . . . . 18
- 18a. Connecting ducts wound once around seminal receptacles (Fig. 41); Peru *moyobamba*
- 18b. Connecting ducts probably very short (1955, figs. 26, 27); Hispaniola *dominicus*

- 19a. Epigynum depression with a median septum (Fig. 44); ducts short, opening into middle of ectal side of seminal receptacles (Fig. 43); Costa Rica, Panama ..... *vaticus*
- 19b. Epigynum and ducts otherwise ..... 20
- 20a. Epigynum openings in two dark spots anterior to seminal receptacles (Figs. 55, 56); southeastern Brazil ..... *bicorniger*
- 20b. Epigynum openings otherwise ..... 21
- 21a. Openings in a corner of a depression; area anterior and between seminal receptacles sclerotized (Fig. 66); eastern Brazil to Paraguay ... *nebulosus*
- 21b. Openings usually indistinct; area between seminal receptacles sometimes sclerotized but not anteriorly ..... 22
- 22a. Seminal receptacles long and S-shaped (Figs. 73, 74); Trinidad to eastern Brazil ..... *salobrensis*
- 22b. Seminal receptacles not S-shaped ..... 23
- 23a. Duct coiling twice around receptacles (1955, fig. 31); Mexico ... *juarezi*
- 23b. Ducts coiling at most once around receptacles ..... 24
- 24a. Seminal receptacles spherical (1955, fig. 29); Bahama Isls., Jamaica ..... *nadleri*
- 24b. Seminal receptacles ovoid or longer than wide; Central America and South America ..... 25
- 25a. Epigynum with a median anterior dark spot (Fig. 49); connecting ducts not coiled completely around seminal receptacles (Fig. 48); Nicaragua ..... *aspus*
- 25b. Epigynum without median dark spot; connecting ducts coiled at least once around seminal receptacles ..... 26
- 26a. Connecting ducts entering openings from posterior (Figs. 58-61); Venezuela ..... *zurlus*
- 26b. Connecting ducts entering openings from side ..... 27
- 27a. Dorsum of abdomen with a longitudinal dusky band and two cross bands (Fig. 72); median area of epigynum light (Fig. 71); Mato Grosso ..... *bicruciatu*
- 27b. Dorsum of abdomen light, epigynum without such median light area (Figs. 81, 83, 85); Panama to Bolivia ..... *erythrophthalmus*

### EPISINUS IMMUNDUS (Keyserling), new combination

#### Figures 16-22, Map

*Theridium immundum* Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 89, pl. 4, fig. 57, ♀. Two female syntypes from Le Para [Belém, Pará], Brazil, in the Muséum National d'Histoire Naturelle, Paris, examined. Other syntypes come from Pebas, [Loreto], Peru.

*Theridium bituberculatum* Keyserling, 1884, *op. cit.*, 2(1): 92, pl. 4, fig. 60. Juvenile female holotype from Pebas, Amazonas, [Pebas, Loreto, Peru], in the Muséum National d'Histoire Naturelle, Paris, examined. NEW SYNONYMY.



*Thymoites immundis*, — Keyserling, 1886, *op. cit.*, 2(2): 295.

*Thymoites bituberculatus*, — Keyserling, 1886, *op. cit.*, 2(2): 295.

*Thymoites bigibbosus* Roewer, 1951, *Abhandl. naturwiss. Verein Bremen*, 32: 504. New name for *Thymoites bituberculatus* Keyserling, thought preoccupied by *Hypomma bituberculatus* Wider. NEW SYNONYMY.

*Description.* Carapace rich brown with some silvery reddish pigment between lateral eyes. Sternum light brown with dark brown spots; spots on sides emphasize the lobes (Fig. 19). Legs banded rich dark brown on light. Dorsum of abdomen gray with indistinct darker gray maculations; venter with some white pigment between epigastric groove and spinnerets. Eye region of carapace narrow, region between eyes swollen. Eyes subequal in size, anterior median eyes two-thirds diameter apart, almost touching laterals; posterior median eyes one diameter apart, in some specimens almost touching laterals. Chelicerae with two long teeth on anterior margin, none on posterior. Sternum with lobes on sides (Fig. 19). The abdomen is subspherical or with posterior humps (Figs. 18, 20). Total length of a syntype 5.2 mm. Carapace 2.3 mm long, 2.1 mm wide. First femur, 3.1 mm; patella and tibia, 3.2 mm; metatarsus, 1.4 mm; tarsus, 0.8 mm. Second patella and tibia, 2.7 mm; third, 1.9 mm; fourth, 2.6 mm.

Figures 16-19 were prepared from a syntype specimen from Belém, Brazil.

*Note.* The species is quite variable judging by the five specimens available. The posterior median eyes may be more or less close to the laterals. The humps of the abdomen may be almost missing (Fig. 18) or be distinct (Fig. 20). Both syntypes of *E. immundus* almost lack humps; the immature holotype of *T. bituberculatum* has humps. The epigynum depression may be surrounded by a lip (Fig. 17) or may have a lip only on sides and posterior (Fig. 22). One of the two syntypes from Belém has the depression bordered all around, the other one not. The internal genitalia may be so heavily sclerotized that the ducts are invisible, unless viewed from a lateral position, or they may be translucent.

The placement of this species in *Episimus* is not certain.

*Distribution.* Amazon Valley.

*Records.* *Peru. San Martín:* Mishqui-yacu, 20 km NE of Moyobamba, Aug. 1947, 2 ♀ (F. Woytkowski, AMNH). *Huánuco:* Cucharas, Huallaga Valley, Feb.-April 1954, ♀ (F. Woytkowski).

## EPISINUS TYPICUS (Nicolet), new combination

Figures 12-15, Map

*Theridion typicum* Nicolet, 1849, in Gay, *Historia de Chile*, 3: 539. Type from Valdivia, Chile, lost.

? *Theridion agreste* Nicolet, 1849, *op. cit.*, p. 540. Type from Chile, lost.

*Episinus dusenii* Tullgren, 1902, *Bih. Svensk. Vet. Ak. Handl.*, 28: 14, pl. 1, fig. 4, ♀. Female holotype from upper part of Aysen Valley, [Aysen], southern Chile in the Naturhistoriska Riksmuseet, Stockholm, examined. NEW SYNONYMY.

*Note.* This species usually has a pear-shaped abdomen (Fig. 14), described by Nicolet for two species. The small size in Nicolet's descriptions may indicate that he had immature specimens.

*Description.* Carapace yellow-brown, dark brown or gray on each side. Sternum yellow, darker on sides. Legs yellow-brown with dark brown bands as wide as intermediate areas. Abdomen mottled, black and white pigment above and with white pigment spots on sides; venter gray sometimes without pigment. Carapace highest in thoracic region with a longitudinal very distinct thoracic depression. Eyes subequal in size in female; posterior medians slightly larger than others in male. Anterior median eyes more than their diameter apart, almost touching laterals. Posterior medians their radius apart and their radius from laterals. Abdomen usually pear-shaped (Fig. 14), but quite variable. Anterior point of abdomen overhanging carapace. Colulus larger than usual in the genus, almost length of setae. Total length of female 3.5 mm. Carapace 1.4 mm long, 1.2 mm wide. First femur, 1.7 mm; patella and tibia, 1.8 mm; metatarsus, 1.9 mm; tarsus, 0.6 mm. Second patella and tibia, 1.2 mm; third, 0.9 mm; fourth, 1.8 mm. Total length of male 2.9 mm. Carapace 1.3 mm long, 1.1 mm wide. First femur, 2.0 mm; patella and tibia, 2.2 mm; metatarsus, 2.8 mm; tarsus, 1.0 mm. Second patella and tibia, 1.2 mm; third, 1.1 mm; fourth, 2.0 mm.

The epigynum has a central opening (Fig. 13). Anterior to the opening is a raised boss. The internal genitalia are heavily sclerotized (Fig. 12). The ectal margin of the palpal cymbium is lobed (Fig. 15).

*Records.* *Chile. Arauco:* Peillén - Pille, Cord. Nahualbuta, Jan. 1954 (L. Peña, ISNB); Pichinahuel, Cord. Nahualbuta, Dec. 1958 (L. Peña, ISNB). *Cautín:* Dalcabue, Feb. 1954, ♀ (L. Peña, ISNB). *Osorno:* 10 km E of Pnyehue, 24 Jan. 1954 (E. S. Ross, A. E. Michelbacher, CAS); La Picada en el Volcán Osorno, Jan. 1958, ♀ (H. Zapfe); Río Gol-Gol, Feb. 1957, ♂

(L. Peña, ISNB). *Llanquihue*: Carelmapu, 27-28 Feb. 1957, ♀, ♂ (L. Peña, ISNB). *Chiloe*: Chaitén, 6 Feb. 1954 (L. Peña, ISNB).

EPISINUS BRUNCOVIRIDIS (Mello-Leitão)

*Faiditus bruncoviridis* Mello-Leitão, 1948, An. Acad. Brasileira Cienc., 20: 156, figs. 4, 5, ♀. Female holotype from Cane Grove, British Guiana in the British Museum, examined.

*Episinus bruncoviridis*, — Levi, 1955, Jour. New York Ent. Soc., 62: 70, figs. 13, 19, 20, 34, ♀, ♂.

This species is readily distinguished by the striking markings: a dorsal white folium on the long pear-shaped abdomen.

*Distribution*. Panama, Trinidad to Guianas.

*Additional records*. *Panama Canal Zone*: Barro Colorado Isl. (many collections); Summit; Forest Reserve; Chilibre; Fort Randolph (all A. M. Chickering).

EPISINUS EMANUS sp. n.

Figures 9-11

*Type*. Female holotype from Barro Colorado Island, Panama Canal Zone, June-July 1934 (A. M. Chickering), in the Museum of Comparative Zoology. The specific name is an arbitrary combination of letters.

*Description*. Carapace yellow-brown; area between eyes white. Legs yellow, abdomen yellowish gray with a transverse line of white pigment spots between humps and an indistinct longitudinal median dorsal band of black pigment. Anterior median eyes slightly smaller than others; their diameter apart, slightly less than one-quarter diameter from laterals. Posterior eyes two-thirds diameter apart. Chelicerae without teeth. Fourth legs slightly longer than first. Abdomen subtriangular, widest anteriorly; with two tubercles (Fig. 11). Total length, 3.2 mm. Carapace, 1.2 mm long, 1.2 mm wide. First patella and tibia, 2.0 mm; second, 1.4 mm; third, 1.0 mm. Fourth femur, 2.1 mm; patella and tibia, 2.1 mm; metatarsus, 2.0 mm; tarsus 0.8 mm.

The specimen is in a poor state of preservation. Thus, the coloration of the abdomen is not distinct. The species probably belongs to *Episinus*. The area between the eyes is white as in some other members of the genus.

*Diagnosis*. The shape of the abdomen (Fig. 11) separates the species from *E. albostrigatus*, and by the sclerotized internal genitalia (Fig. 9) it is readily separated from most other *Episinus* known.

## EPISINUS ALBOSTRIATUS (Simon), new combination

Figures 5-7

*Episinopsis albostriatus* Simon, 1895, Ann. Soc. ent. France, 64: 136. Female holotype from Pebas, [Loreto], Peru, in the Muséum National d'Histoire Naturelle, Paris, examined.

*Description.* Carapace brown, region between eyes lightest. Sternum, legs brown. Abdomen with dark gray blotches on dorsum; venter mostly gray. Short horns between eyes. Eyes about subequal in size; laterals on slight tubercles. Anterior median eyes less than one diameter apart, almost touching laterals. Posterior median eyes less than one diameter apart; less than one diameter from laterals. Abdomen about as wide as long; a hump on each side (Fig. 7). Epigynum with a short scape (Fig. 6). Total length 4.2 mm. Carapace 1.6 mm wide, 1.4 mm long. First femur, 2.4 mm; patella and tibia, 2.5 mm; metatarsus, 2.6 mm. Second patella and tibia, 1.7 mm; third, 1.3 mm; fourth, 2.3 mm.

## EPISINUS RECIFENSIS sp. n.

Figure 8

*Type.* Male holotype from Recife, Pernambuco, Brazil, in the Senckenberg Museum (no. RII /6323/1). The species is named after the type locality.

*Description.* Carapace yellow, white between eyes, some gray on sides and a narrow gray line around margin. Sternum, legs yellow. Abdomen whitish with a pair of long gray streaks anteriorly on dorsum and four pairs of gray spots posteriorly; whitish above spinnerets, which are surrounded by gray. Venter of abdomen mostly white. Carapace with two swollen horns between eyes, which are white. Anterior median eyes larger than posterior medians, much larger than anterior lateral eyes, almost twice their diameter. Anterior median eyes one-third their diameter apart, touching laterals. Posterior eyes their radius apart. Abdomen 1.6 times longer than wide, oval in shape. There are no indications of humps on the abdomen of the male. Total length 3.3 mm. Carapace 1.0 mm long, 1.0 mm wide. First femur, 2.5 mm; patella and tibia, 2.9 mm; metatarsus, 2.8 mm; tarsus, 1.0 mm. Second patella and tibia, 1.6 mm; third, 1.1 mm; fourth, 2.3 mm.

*Diagnosis.* The palpal tip (Fig. 8) and longer eye horns separate this species from *E. cognatus*.

## EPISINUS COGNATUS O. P.-Cambridge

## Map

? *Episinus longipes* Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2 (1): 207, pl. 10, fig. 125, ♀, ♂. Male and female syntypes from Monterico, [900 m elev., Ayacucho, prov. Huanta], Peru, in the Polish Academy of Sciences, Warsaw, apparently lost. DOUBTFUL SYNONYMY.

*Episinus cognatus* O. P.—Cambridge, 1893, Biologia Centrali-Americana, Araneidea, 1: 109, p. 15, fig. 2, ♂. Male holotype from Teapa, [Tabasco], Mexico, in the British Museum. — Levi, 1955, Jour. New York Ent. Soc., 62: 71, figs. 8-10, 21, 22, 33, 41, ♀, ♂.

*Episinopsis simplifrons* Simon, 1897, Proc. Zool. Soc. London, p. 860. Juvenile holotype from St. Vincent Isl., Lesser Antilles, in the British Museum, examined. NEW SYNONYMY.

*Note.* Keyserling's 1884 description fits this species. His specimen was slightly larger than the ones I have examined. The illustrations match this species, although the epigynum of the Keyserling specimen seems to have been covered by secretion, as is common in this species. Unfortunately the type is lost, and thus the synonymy remains uncertain.

The central sclerotized area of the epigynal depression is larger and the depressed area has a slightly different shape in Peruvian specimens.

*Distribution.* Texas to Central Peru, Amazon (Map).

*Additional records.* *Costa Rica.* San José (E. Schmidt, AMNH). *Panama:* El Valle (A. M. Chickering). *Panama Canal Zone.* Barro Colorado Isl. (many collections); Summit (A. M. Chickering); Experimental Gardens (A. M. Chickering). *Ecuador.* *Guayas:* Colonche, 1941 (R. W. Landes); Milagro, Jan. 1943, juv. ♂ (H. E., D. L. Frizzell). *Peru. Huánuco:* Tingo María, Oct. 1946, ♀, Dec. 1946, ♂ (J. C. Pallister, AMNH); Oct. 1954 (E. I. Schlinger, E. S. Ross, CAS). *Brazil. Amazonas:* Manaus, Sept. 1962, ♀ (W. L. Brown).

## EPISINUS GRATIOSUS Bryant

## Figures 1-4

*Episinus gratiosus* Bryant, 1940, Bull. Mus. Comp. Zool., 86: 313, fig. 65, ♀. Female holotype from Pico Turquino, 500 m, Oriente, Cuba, in the Museum of Comparative Zoology, examined.

*Meotipa clementina.* — Bryant, 1940, *ibid.*, 86: 314, figs. 79, 80, ♂. Not *M. clementinae* Petrunkevitch.

*Description.* Carapace, sternum yellow-brown with some darker marks. Legs yellow-brown with darker brown bands.

Abdomen with white pigment spots on dorsum, densest between tubercles. Sides of abdomen slightly darker, venter gray. Diameter of anterior median eyes larger than that of other eyes. Anterior median eyes of female one and one-half diameters apart, almost touching laterals; posterior median eyes one and one-half diameters apart, one diameter from laterals. Anterior median eyes of male one diameter apart almost touching laterals; posterior median eyes two diameters apart, one and one-half diameters from laterals. The abdomen is longer than wide (Fig. 3). There are two tubercles, one on each side, close to the posterior end. Total length of female 3.2 mm. Carapace 1.0 mm long, 0.9 mm wide. First femur, 1.8 mm; patella and tibia, 1.9 mm; metatarsus, 1.9 mm; tarsus, 0.5 mm. Second patella and tibia, 1.1 mm; third, 0.8 mm; fourth, 1.7 mm. Total length of male 2.2 mm. Carapace 0.94 mm long, 0.89 mm wide. First femur, 2.22 mm; patella and tibia, 2.24 mm; metatarsus, 2.31 mm; tarsus, 0.73 mm. Second patella and tibia, 1.07 mm; third, 0.81 mm; fourth, 1.82 mm.

*Records.* *Cuba.* Las Villas: Soledad, April 1936, ♂ (P. J. Darlington). Oriente: S. side Pico Turquino, 1100 m, June 1936, ♀ (P. J. Darlington). *Haiti.* Hills near Port-au-Prince, 600 m, 2 Oct. 1934, ♀ (P. J. Darlington).

### EPISINUS AMOENUS Banks

#### Map

*Episinus amoenus* Banks, 1911, Proc. Acad. Nat. Sci. Philadelphia, 63: 445, figs. 13, 15. Male and female syntypes from the Swananoa River, North Carolina, in the Museum of Comparative Zoology, examined. — Levi, 1955, Jour. New York Ent. Soc., 62: 68, figs. 4, 17, 18, 32, 39, ♀, ♂.

*Distribution.* Eastern United States from Maryland to Florida and Alabama.

### EPISINUS MALACHINUS (Simon), new combination

#### Figures 30-33

*Janulus malachinus* Simon, 1895, Ann. Soc. ent. France, 64: 135. Two female syntypes from Pebas, [Loreto], Peru, in the Muséum National d'Histoire Naturelle, Paris, examined.

*Description.* The specimens, almost colorless, are yellowish white in alcohol except for slight pigment behind anterior median eyes, some silvery spots around other eyes, and some white pigment spots on dorsum and posterior of abdomen. Eye region with two large horns. Eyes on tubercles, lens of anterior median eyes larger than that of others. Abdomen subspherical

with a median dorsal tubercle (Figs. 30, 31). Total length 2.1 mm. Carapace 0.68 mm long, 0.61 mm wide. First femur, 1.58 mm; patella and tibia, 1.52 mm; metatarsus, 1.48 mm; tarsus, 0.56 mm. Second patella and tibia, 0.80 mm; third, 0.56 mm; fourth, 1.08 mm.

EPISINUS TERESOPOLIS sp. n.

Figures 24-26

*Type.* Female holotype, from Teresópolis, Est. Rio de Janeiro, Brazil, March 1946 (H. Siek), in the American Museum of Natural History. The specific name is a noun in apposition after the type locality.

*Description.* Carapace yellowish-white with a reddish spot on clypeus. Sternum, legs yellow-white. Abdomen with white pigment spots on dorsum and a red spot on each side. Eyes subequal in size. Anterior median eyes one diameter apart. Posterior median eyes one diameter apart, almost touching laterals. Horns between eyes. Abdomen with a dorsal projection (Fig. 24). Total length 1.5 m. Carapace 0.60 mm long, 0.52 mm wide. First femur, 0.98 mm; patella and tibia, 1.01 mm; metatarsus, 0.70 mm; tarsus, 0.43 mm. Second patella and tibia, 0.73 mm; third, 0.50 mm; fourth, 0.78 mm.

*Diagnosis.* *Episinus teresopolis* may be the same as *E. implexus* known only from an immature specimen from Venezuela. Both have a dorsal extension on the abdomen by which they differ from all other *Episinus* species.

*Records.* One ♀ paratype collected with type.

EPISINUS IMPLEXUS (Simon)

Figure 23

*Hyoerca implexa* Simon, 1894, Histoire Naturelle des Araignées, 1: 559; 1895, Ann. Soc. ent. France, 64: 146. Juvenile holotype from San Esteban, [Aragua], Venezuela, in the Muséum National d'Histoire Naturelle, Paris, examined.

The type examined is a juvenile and cannot be placed, although the abdomen shape (Fig. 23) may be diagnostic.

EPISINUS DOMINICUS Levi

*Episinus dominicus* Levi, 1955, Jour. New York Ent. Soc., 62: 77, figs. 26, 27, 38, ♀. Female holotype from Valle de Polo, Dominican Republic, in the American Museum of Natural History.

*Distribution.* Known from only the type specimen from Hispaniola.

## EPISINUS UNITUS sp. n.

Figures 27-29

*Type.* Female holotype, from 3 km south of Unity Valley, St. Ann Parish, Jamaica, 9 Dec. 1954 (A. M. Nadler), in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

*Description.* Carapace gray with a lighter V-shaped mark; eyes reddish. Sternum gray. Legs yellow-white. Abdomen gray with some white spots on sides; venter lighter with a reddish cast. Anterior median eyes larger than others, less than one diameter apart, almost touching laterals. Posterior median eyes one diameter apart, touching laterals. Horns between eyes. Abdomen with seven dorsal nipples in a transverse row (Fig. 27). Total length 1.4 mm. Carapace 0.65 mm long, 0.60 mm wide. First femur, 1.17 mm; patella and tibia, 1.27 mm; metatarsus, 1.17 mm. Second patella and tibia, 0.80 mm; third, 0.52 mm; fourth, 0.91 mm.

*Diagnosis.* Like *E. moyobamba*, *E. pyrus* and *E. dominicus*, the abdomen has numerous nipples (Fig. 27). The small distinct median depression of the epigynum (Fig. 29) and the shape of the seminal receptacles (Fig. 28) separate the species.

*Record.* One ♀ and juvenile paratypes collected with type.

## EPISINUS MOYOBAMBA sp. n.

Figures 40-42

*Type.* Female holotype from Moyobamba, San Martín, Peru, 20 Dec. 1946 (J. C. Pallister), in the American Museum of Natural History. The specific name is a noun in apposition after the type locality.

*Description.* Carapace, sternum, legs yellow-white. Reddish around eyes. Ends of fourth femora and patellae slightly reddish. Abdomen with irregular gray marks, reddish around nipples, on each lateral projection and on posterior. Anterior median eyes larger than others, their diameter apart, almost touching laterals. Posterior median eyes three-quarters diameter apart, one-quarter from laterals. A pair of horns between eyes. Abdomen subtriangular with numerous dorsal nipples (Fig. 40). Total length 1.3 mm. Carapace 0.52 mm long. First femur, 1.00 mm. Second patella and tibia, 0.70 mm; third, 0.47 mm; fourth, 0.75 mm. (The specimen described is damaged.)



*Diagnosis.* Like the related *E. dominicus* the abdomen has nipples on the dorsum (Fig. 40). The connecting ducts wind once around the seminal receptacles (Fig. 41), while those of *E. dominicus* are shorter and do not wind around.

EPISINUS PYRUS sp. n.

Figures 34-36

*Type.* Female holotype from Summit, Panama Canal Zone, 16-17 August 1950 (A. M. Chickering), in the Museum of Comparative Zoology. The specific name is an arbitrary combination of letters.

*Description.* Carapace yellow-white with a bright red median band (Fig. 34). Sternum yellow-white, legs yellow-white with distal end of femora and patellae dusky. Dorsum of abdomen mottled black but area around each nipple and lateral extension bright red (Fig. 34). A red patch on each side of abdomen. Venter yellow-white. Carapace with two horns between anterior median eyes. Anterior median eyes slightly larger than posterior medians, much larger than laterals, laterals on tubercles. Anterior median eyes three-quarters diameter apart. Posterior median eyes one diameter apart, their radius from laterals. Total length 1.2 mm. Carapace 0.52 mm long, 0.52 mm wide. First femur, 0.96 mm; patella and tibia, 1.08 mm; metatarsus, 0.71 mm; tarsus, 0.47 mm. Second patella and tibia, 0.62 mm; third, 0.47 mm; fourth, 0.78 mm.

*Diagnosis.* Like *E. dominicus* and *E. moyobamba* the abdomen has dorsal nipples (Fig. 34). The transverse lip of the epigynum (Fig. 36) separates *E. pyrus* from these related species. The connecting ducts are very short (Fig. 35).

*Records.* Panama Canal Zone: Summit Park, Dec. 1957, ♀ paratype (A. M. Chickering); Summit, 21-29 July 1950, ♀ paratype (A. M. Chickering).

EPISINUS COLIMA Levi

*Episinus colima* Levi, 1955, Jour. New York Ent. Soc., 62: 76, figs. 11, 40, ♂. Male holotype from Las Humedades, Armeria, Colima, Mexico, in the American Museum of Natural History.

The abdomen, which is missing from the holotype specimen, has a narrow ring of black broken by red around the edge of the dorsum. The large tubercle in the center is red with a black spot anteriorly. Otherwise the color is yellow-white. It is of the same shape as related species.

*Distribution.* Colima, Mexico, to Panama Canal Zone.

*Records.* Panama Canal Zone: Barro Colorado Isl., 20 April, 1953, ♂ (A. M. Nadler, AMNH).

#### EPISINUS PANAMENSIS Levi

Figures 37-39

*Episinus panamensis* Levi, 1955, Jour. New York Ent. Soc., 62: 73, figs. 14, 35, ♂. Male holotype, from Barro Colorado Island, Panama Canal Zone, in the American Museum of Natural History.

*Description.* Female pattern and coloration and general structure like that of male. The abdomen has one median dorsal nipple (Fig. 37). Total length 1.9 mm. Carapace 0.72 mm long, 0.65 mm wide. First femur, 1.62 mm; patella and tibia, 1.72 mm; metatarsus, 1.59 mm; tarsus, 0.60 mm. Second patella and tibia, 0.98 mm; third, 0.68 mm; fourth, 1.21 mm.

*Record.* Panama Canal Zone: Barro Colorado Island (numerous records).

#### EPISINUS VATICUS sp. n.

Figures 43-47

*Type.* Male holotype from Forest Reserve, Panama Canal Zone, 4-6 July 1939 (A. M. Chickering), in the Museum of Comparative Zoology. The specific name is an arbitrary combination of letters.

*Description.* Carapace yellow with a dusky line. Sternum gray. Legs yellow with some dusky marks. Dorsum of abdomen with a large white spot having some black behind it and many small white spots; each lateral extension dark on posterior side, reddish anteriorly (Figs. 46, 47). Venter of abdomen light gray. Female similar except having much red pigment on carapace and abdomen. Two horns between anterior median eyes. Lateral eyes on tubercles. Anterior median eyes much larger than posterior medians. Anterior medians two-thirds their diameter apart. Posterior medians one diameter apart, their radius from laterals. Total length of female 1.9 mm. Carapace 0.73 mm long, 0.68 mm wide. First femur, 1.69 mm; patella and tibia, 1.63 mm; metatarsus, 1.72 mm; tarsus, 0.60 mm. Second patella and tibia, 1.04 mm; third, 0.62 mm; fourth, 1.33 mm. Total length of male 1.5 mm. Carapace 0.60 mm long, 0.57 mm wide. First femur, 1.54 mm; patella and tibia, 1.62 mm; metatarsus, 1.60 mm; tarsus, 0.55 mm. Second patella and tibia, 0.91 mm; third, 0.60 mm; fourth, 1.17 mm.

*Diagnosis.* The male of this species is readily distinguished by the distal diagonal hook on the palpal conductor (Fig. 45). The epigynum depression has a median posterior septum (Fig. 44) and the connecting ducts are very short (Fig. 43), unlike other Central American species. The abdomen lacks dorsal nipples (Fig. 47).

*Records.* *Costa Rica:* San Isidro del General, 600-1200 m, ♂ (D. Rounds). *Panama Canal Zone:* Forest Reserve, 4-6 July, 1939, ♀ paratype (A. M. Chickering).

EPISINUS ASPUS sp. n.

Figures 48-51

*Type.* Male holotype from Musawas, Waspue River, Nicaragua, 30 Sept. 1955 (B. Malkin), in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

*Description.* Carapace yellow-white, dusky on sides. Eye region reddish. Sternum gray. Legs yellow-white. Abdomen reddish and black around border of dorsum; center of dorsum with white pigment in male, without pigment in female; venter reddish in female, dusky in male. Anterior median eyes seemingly larger than others, about one-third their diameter apart. Posterior median eyes less than one diameter apart, touching laterals. Pigment around base of lenses makes it difficult to see their exact shape. The females have horns between eyes, but these are absent in males. Abdomen subtriangular (Fig. 51), smooth, lacking nipples. Total length of female 2.2 mm. Carapace 0.71 mm long, 0.62 mm wide. First femur, 1.50 mm; patella and tibia, 1.42 mm; metatarsus, 1.36 mm; tarsus, 0.60 mm. Second patella and tibia, 0.85 mm; third, 0.58 mm; fourth, 1.17 mm. Total length of male 1.5 mm. Carapace 0.62 mm long, 0.55 mm wide. First femur, 1.48 mm; patella and tibia, 1.59 mm; metatarsus, 1.32 mm. Second patella and tibia, 0.85 mm; third, 0.65 mm; fourth, 1.17 mm.

*Diagnosis.* The distal margin of embolus base is almost at right angles to the long axis of the palpus (Fig. 50), while it is diagonal in the related *E. panamensis*. The median anterior dark spot of the epigynum (Fig. 49) and the longer seminal receptacles and shorter connecting ducts (Fig. 48) distinguish females from *E. panamensis*.

*Record.* One ♀ paratype collected with holotype.

## EPISINUS BIMUCRONATUS (Simon), new combination

Figures 52-54

*Sphyrotinus bimucronatus* Simon, 1894, Histoire Naturelle des Araignées, 1: 551, *nomen nudum*; 1894, Ann. ent. Soc. France, 64: 144. Female holotype from San Esteban, [Aragua], Venezuela, in the Muséum National d'Histoire Naturelle, Paris, examined.

*Description.* Carapace yellow-white with silvery pigment between eyes and dark pigment behind anterior median eyes. Sternum, legs whitish-yellow. Abdomen with white pigment spots on dorsum and posterior (Fig. 54). No horns in eye region. Diameter of anterior median eyes equal to radius of other eyes. Lateral eyes on tubercles. Anterior median eyes one and one-half diameters apart, almost touching laterals. Posterior median eyes one-third diameter apart, one-quarter diameter from laterals. Abdomen wider than long with a median anterior hump and two posteriorly directed humps (Fig. 54). Some stronger setae on dorsum of distal end of patellae and some on tibiae. Total length 1.4 mm. Carapace 0.54 mm long, 0.44 mm wide. First femur, 1.04 mm; patella and tibia, 1.00 mm; metatarsus, 0.84 mm; tarsus, 0.40 mm. Second patella and tibia, 0.68 mm; third, 0.46 mm; fourth, 0.76 mm.

## EPISINUS BICORNIGER (Simon), new combination

Figures 55-57

*Theridium bicorne* Keyserling, 1891, Die Spinnen Amerikas, Brasilianische Spinnen, 3: 193, pl. 7, fig. 140, ♀, ♂. Male and female syntypes from Serra Vermelha, [Est. Rio de Janeiro], Brazil, in the British Museum, examined. Not *T. bicorne* Wider.

*Janulus bicornigera* Simon, 1894, Histoire Naturelle des Araignées, 1: 517. New name for *T. bicorne* Keyserling.

Abdomen subtriangular as related species. Total length of female 2.2 mm. Total length of male 1.7 mm.

## EPISINUS JUAREZI Levi

*Episinus juarezi* Levi, 1955, Jour. New York Ent. Soc., 62: 74, figs. 5, 6, 30, 31, 42, 43, ♀, ♂. Male holotype from Tamaulipas, Mexico, in the American Museum of Natural History.

*Distribution.* Tamaulipas, San Luis Potosí to Oaxaca, Mexico.

## EPISINUS CHIAPENSIS Levi

*Episinus chiapensis* Levi, 1955, Jour. New York Ent. Soc., 62: 76, fig. 7, ♂. Male holotype from Las Ruinas de Palenque, Chiapas, Mexico, in the American Museum of Natural History.

*Distribution.* Known only from Chiapas, Mexico.

## EPISINUS NADLERI Levi

*Episinus nadleri* Levi, 1955, Jour. New York Ent. Soc., 62: 77, figs. 12, 28, 29, 37, ♀, ♂. Female holotype from South Bimini, Bahama Islands, in the American Museum of Natural History.

*Distribution.* Bahama Islands and Jamaica.

*Additional Record.* Jamaica: The Great Morass, 25 March 1955. ♂ (A. M. Nadler, AMNH).

## EPISINUS NEBULOSUS (Simon), new combination

Figures 64-68

*Janulus nebulosus* Simon, 1895, Ann. Soc. ent. France, 64: 135. Female holotype from Serra de Communaty, Prov. Pernambuco, Brazil, in the Muséum National d'Histoire Naturelle, Paris, examined.

*Janulus germaini* Simon, 1895, *ibid.*, 64: 136. Female holotype from Paraguay in the Muséum National d'Histoire Naturelle, Paris, examined. NEW SYNONYMY.

*Note.* Female holotype of *J. nebulosus* has a label indicating that it comes from Sa. Communaty, an unknown location placed by Simon at times in the neighboring state of Ceara.

*Description.* Carapace with sides brownish, darker than middle. Sternum, legs yellow-brown; ends of segments slightly darker. Abdomen with scattered fine black spots and some white pigment spots anteriorly on dorsum, between humps and around sides. Venter of abdomen gray, darker on sides than in middle. Two horns in eye region. Lateral and posterior eyes on tubercles. Abdomen about as wide as long (Fig. 67). Epigynum openings distinct (Fig. 66); two duct loops in ventral view if cleared and one loop visible in dorsal view of female genitalia (Figs. 64, 65). Total length 2.8 mm. Carapace 0.82 mm long, 0.74 mm wide. First femur, 1.40 mm; patella and tibia, 1.62 mm; metatarsus, 1.36 mm; tarsus, 0.36 mm. Second patella and tibia, 0.86 mm; third, 0.64 mm; fourth, 1.12 mm.

The holotype of *J. germaini* is a younger adult female still showing a dorsal abdominal pattern (Fig. 68). The epigynum and internal genitalia are like those of the holotype of *J. nebulosus*.

## EPISINUS BICRUCIATUS (Simon), new combination

Figures 69-72

*Janulus bicruciatas* Simon, 1895, Ann. Soc. ent. France, 64: 136. Female holotype from Mato Grosso, Brazil, in the Muséum National d'Histoire Naturelle, Paris, examined.

*Description.* The whole specimen yellow-white except some pigment behind anterior median eyes and silvery around other eyes. Abdomen with indistinct longitudinal gray band having two cross bands (Fig. 72), a black mark on venter above pedicel, a distinct round black spot on posterior side of each lateral tubercle and a white pigment line on each side of spinnerets outside of which is a black mark. Horns between eyes large; lateral and posterior median eyes on tubercles. Abdomen subtriangular with tubercles more distinct from ventral view. Total length 2.6 mm. Carapace 0.76 mm long, 0.68 mm wide. First femur, 1.52 mm; patella and tibia, 1.60 mm; metatarsus, 1.50 mm; tarsus, 0.54 mm. Second patella and tibia, 0.84 mm; third, 0.62 mm; fourth, 1.14 mm.

EPISINUS SALOBRENSIS (Simon), new combination

Figures 73-78, Map

*Janulus salobrensis* Simon, 1895, Ann. Soc. ent. France, 64: 135. Two female syntypes from Salobro [near Vargito on old maps], Bahia, Brazil, in the Muséum National d'Histoire Naturelle, Paris, examined.

*Episinus erythrophthalmus*, — Levi, 1955, Jour. New York Ent. Soc., 62: 74, figs. 24, 25, 36. Not *E. erythrophthalmus* (Simon).

*Description.* The two type specimens are almost colorless yellowish, the only pigment being silvery behind eyes; sides of carapace slightly darker than middle. Posterior sides of abdomen slightly reddish, some small white pigment spots, and a larger white spot on each side of spinnerets. Horns between eyes small; lenses of lateral and posterior median eyes on tubercles. Abdomen subtriangular (Fig. 77). Total length of one female syntype 2.0 mm. Carapace 0.80 mm long, 0.70 mm wide. Legs broken off.

Figures 73-75 and 77 were prepared from a syntype.

The female has been described previously (Levi, 1955). The anterior lateral margins of the oval depression of the epigynum are more or less sclerotized. Although the specimen previously described had red eyes, no others seen have red pigment in the eye region. Only fragments of males collected with females were available.

*Records.* *Lesser Antilles. Trinidad:* Simla near Arima, 12 Dec. 1954, ♀; 28 Dec. 1954, ♀ (A. M. Nadler, AMNH); Port of Spain, 1913, ♀ (R. Thaxter). *British Guiana:* Kuyuwini Landing, Kuyuwini River, 20 Nov. 1937, ♀, ♂ fragments (W. G. Hassler, AMNH). *Brazil. Pernambuco:* Recife (SMF).

## EPISINUS ZURLUS sp. n.

Figures 58-63

*Type.* Male holotype from Venezuela (E. Simon) in the Muséum National d'Histoire Naturelle, Paris (no. 13529). The name is an arbitrary combination of letters.

*Note.* Although it is poor practice to describe new species without accurate locality data, I have done so here because a number of specimens, both male and female, are available. Also, it is known that Simon, who collected the specimens, travelled in only a small region of Venezuela: from the Caracas vicinity to Tovar, Aragua, to Valencia, Puerto Cabello and San Esteban, Carabobo. The specimens were in the Paris collections, mixed up with specimens of *E. erythrophthalmus* and labelled as such.

*Description.* Carapace yellow-white, some pigment behind anterior median eyes, silvery between other eyes, sternum, legs yellow-white. Abdomen posteriorly and sides gray, center of dorsum with white pigment spots and some gray pigment; venter light gray, darker toward sides. Carapace with relatively small horns between eyes (Fig. 62). Anterior median eyes much larger than lenses of other eyes, which are on tubercles. Abdomen without dorsal nipples (Fig. 62). Total length of females 2.5 mm. Carapace 0.68 mm long, 0.64 mm wide. First femur, 1.56 mm; patella and tibia, 1.44 mm; metatarsus, 0.86 mm; tarsus, 0.42 mm. Second patella and tibia, 0.84 mm; third, 0.60 mm; fourth, 1.04 mm. Total length of male 1.6 mm. Carapace 0.62 mm long, 0.56 mm wide. First femur, 1.52 mm; patella and tibia, 1.56 mm; metatarsus, 1.36 mm; tarsus, 0.56 mm. Second patella and tibia, 0.84 mm; third, 0.62 mm; fourth, 1.08 mm.

*Diagnosis.* The connecting duets lead posteriorly from the openings (Figs. 58-61) unlike the similar *E. erythrophthalmus*. The transverse line between the openings is sometimes more anterior, sometimes more posterior, in different specimens (Figs. 60, 61). The males are distinguished from *E. erythrophthalmus* by the basal flare of the conductor, which projects ventrally, is sclerotized, and has small teeth on the margin (Fig. 63).

*Records.* Male and female paratypes collected with holotype.

## EPISINUS ERYTHROPTHALMUS (Simon)

Figures 79-93, Map

*Janulus erythrophthalmus* Simon, 1894, Proc. Zool. Soc. London, p. 525.

Male and female syntypes from St. Vincent Island, Lesser Antilles, in the British Museum, examined. Not *E. erythrophthalmus*, — Levi, 1955.

*Description.* Specimens from Panama. Carapace yellowish with dusky border and dusky patches on each side. Sternum white. Legs yellowish with dusky marks. Dorsum of abdomen black behind and on sides; light central area with white spots (Figs. 86, 89). Venter with epigastric area gray and black patches on sides that are extensions of the lateral and posterior dorsal black areas. Female generally lighter and less distinctly marked than male; white spots more numerous and smaller, but also usually having the four dark marks on venter. Two horns between eyes. Anterior median eyes much larger than others. Posterior and lateral eyes on tubercles. Total length of female 2.00 mm. Carapace 0.62 mm long, 0.62 mm wide. First femur, 1.32 mm; patella and tibia, 1.44 mm; metatarsus, 1.28 mm; tarsus, 0.44 mm. Second patella and tibia, 0.78 mm; third, 0.54 mm; fourth, 0.98 mm. Total length of male 1.5 mm. Carapace 0.59 mm long, 0.55 mm wide. First femur, 1.32 mm; patella and tibia, 1.47 mm; metatarsus, 1.28 mm; tarsus, 0.47 mm. Second patella and tibia, 1.02 mm; third, 0.52 mm; fourth 1.04 mm.

Figures 80, 81, 90 were prepared from the syntypes.

*Note.* This species, apparently widespread and relatively common, is quite variable. At first it was thought that the specimens coming from Panama belong to three species; but, on careful comparison, they were all found to have the same proportions and only superficial differences in the epigynum and palpus. The seminal receptacles and more sclerotized parts of the palpus are similar. The differences seem to be due to different degrees of transparency of the epigynum and the position of the anterior transverse sclerotized piece (Figs. 81, 83, 85). The transparent palpal sclerites seem to be in slightly different positions in each individual (Figs. 90-93).

*Distribution.* Panama to Bolivia.

*Records.* *Panama.* Arraiján (A. M. Chickering); 8 km S of El Valle (A. M. Chickering). *Panama Canal Zone.* Forest Reserve; Madden Dam; Chilibre; Summit; Balboa; 3 km N of Paraiso (all A. M. Chickering). *Lesser Antilles.* *Tobago Isl.* (P. H. Johnson, BMNH). *Trinidad:* Simla near Arima (A. M. Nadler, AMNH). Piareo (A. M. Nadler, AMNH). *Venezuela.* ♀, ♂ (E. Simon, MNHN). *Dist. Fed.:* Caracas, 1887-1888, ♂ (E. Simon, MNHN). *Aragua:* Maraëay (A. M. Nadler, AMNH). *British Guiana.* Kuyuwini Landing, Kuyuwini River (W. G. Hassler, AMNH). *Bolivia.* *Cochabamba:* El Palmar, Chaparé, 900-1000 m, Sept. 1956, ♂ (L. Peña, ISNB).



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